

CLAIMS

[cl001] 1. A curing light comprising:
a housing for housing components of a curing light,
a heat sink located within said housing,
at least one semiconductor chip which can emit light of a wavelength useful for curing light curable composite materials,
said heat sink serving to dissipate heat produced by said chip, and
a light reflective device which collects light emitted by said chip and reflects it as a light beam.

[cl002] 2. A curing light as recited in claim 1 wherein said semiconductor chip is selected from the group consisting of light emitting diode chips, laser chips, light emitting diode chip array, diode laser chips, diode laser chip arrays, surface emitting laser chips, edge emitting laser chips, and VCSEL chips.

[cl003] 3. A curing light as recited in claim 1 wherein said light reflective device has a light reflective interior surface.

[cl004] 4. A curing light as recited in claim 3 wherein said light reflective interior surface includes a material selected from the group consisting of Al, Au, Ag, Zn, Cu, Pt, chrome, other metals, plating, and plastic.

[cl005] 5. A curing light comprising:
a heat sink useful for dissipating heat,
at least one semiconductor chip which can emit light of a wavelength useful for curing light curable composite materials,
said heat sink serving to dissipate heat produced by said chip, and
a focusing lens which serves to focus light emitted by said chip into a light beam.

[cl006] 6. A curing light as recited in claim 5 wherein said semiconductor chip is selected from the group consisting of light emitting diode chips, laser chips, light

emitting diode chip array, diode laser chips, diode laser chip arrays, surface emitting laser chips, edge emitting laser chips, and VCSEL chips.

[cl007] 7. A curing light comprising:
a heat sink located within said housing,
a thermoelectric cooler to assist in heat dissipation located on heat sink,
a fan located within said housing, said fan being capable of causing air to move past said thermoelectric cooler in order to improve heat dissipation,
at least one semiconductor chip,
said chip being capable of emitting light useful for curing composite materials,
said heat sink and said thermoelectric cooler serving to dissipate heat created by said chip,
a light reflective device which collects light emitted by said chip and reflects it as a light beam,

[cl008] 8. A curing light as recited in claim 7 wherein said semiconductor chip is selected from the group consisting of light emitting diode chips, laser chips, light emitting diode chip array, diode laser chips, diode laser chip arrays, surface emitting laser chips, edge emitting laser chips, and VCSEL chips.

[cl009] 9. A curing light as recited in claim 7 wherein said light reflective device has a light reflective interior surface.

[cl010] 10. A curing light as recited in claim 9 wherein said light reflective interior surface includes a material selected from the group consisting of Al, Au, Ag, Zn, Cu, Pt, chrome, other metals, plating, and plastic.

[cl011] 11. A curing light comprising:
a heat sink located within said housing,
a thermoelectric cooler to assist in heat dissipation located on heat sink,
a fan located within said housing, said fan being capable of causing air to move past said thermoelectric cooler in order to improve heat dissipation,
at least one semiconductor chip,

said chip being capable of emitting light useful for curing composite materials,
said heat sink and said thermoelectric cooler serving to dissipate heat created by
said chip,

[cl012] 12. A curing light comprising:
a heat sink,
a semiconductor chip which can emit light of a wavelength useful for curing light
curable composite materials,
said heat sink serving to draw heat away from said chip,
a light reflective device which collects light emitted by said chip and reflects it as
a light beam,
a focusing lens which serves to focus said light beam from said light reflective
device.

[cl013] 13. A curing light as recited in claim 12
further comprising a light transport device which can receive light from said
focusing lens;
wherein said light transport device is selected from the group consisting of a
plastic stack, a fiber bundle and a light guide.

[cl014] 14. A curing light as recited in claim 12 wherein said semiconductor
chip is selected from the group consisting of light emitting diode chips, laser chips, light
emitting diode chip array, diode laser chips, diode laser chip arrays, surface emitting
laser chips, edge emitting laser chips, and VCSEL chips.

[cl015] 15. A curing light as recited in claim 12 wherein said light reflective
device has a light reflective interior surface; and wherein said light reflective device
interior surface includes a material selected from the group consisting of Al, Au, Ag, Zn,
Cu, Pt, chrome, other metals, plating, and plastic.

[cl016] 16. A curing light comprising:
a heat sink,
a thermoelectric cooler located on said heat sink,

a semiconductor chip capable of emitting light that is useful in curing composite materials,

said heat sink and thermoelectric cooler serving to draw heat away from said chip and dissipate it,

a light reflective device which collects light emitted by said chip and reflects it as a light beam, and

a focusing lens which serves to focus said light beam from said light reflective device.

[cl017] 17. A curing light as recited in claim 16 further comprising a light transport device and wherein said light transport device is selected from the group consisting of a plastic stack, a fiber bundle and a light guide.